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and surveying instruments) seemed so much more promising than that of a compass-maker, that he was led to apply to the well-known firm for a situation, which was easily found for him. He became superintendent of the business, and afterwards a partner with his cousin; but in 1871 (after being partner for some ten years) he retired, during a loss of health which he regarded as permanent, but which fortunately proved only temporary.

The *Monthly Notices* contain several papers by "William Simms jun.,"* especially on the improvement of instruments. The hole in the central cube of the Greenwich transit-circle telescope was first suggested by him, according to the recollection of Mr James Simms; and (on the same authority) he greatly improved the cutting apparatus of the dividing machines, while as a hand-divider he could scarcely be excelled. For a long time he was employed upon the construction of the National Standard of Length, and greatly assisted the Rev. R. Sheepshanks in that work, a large number of the observations, as well as much in the way of construction, being due to him. He also helped the elder Lord Rosse, put up Mr Carrington's telescope, and did work at Bidston Observatory. His astronomical interests were wide in range; and his daughter (Mrs M'Lachlan) well remembers an occasion when letters announcing some interesting and novel observation made independently by Sir George Airy and himself crossed in the post. We learn from her also that observations on the Sun caused the loss of her father's eyesight.

While in business, and after his marriage in 1844 to Charlotte, daughter of Francis Needham, of Wymondham, Leicestershire, William Simms lived at Granville Square (in London), at Putney, and at Charlton. After his retirement he lived at Burnham, in Somerset; and afterwards in the Isle of Wight, at Ryde and Shanklin. He had one son, who is a surveyor in New Zealand, and the daughter above mentioned. His widow survives him, aged ninety-six, and also quite blind. The late Queen was much interested in the aged couple, and shortly before her death Mr William Simms was granted a small Civil List pension, on account of his blindness, caused by devotion to science.

He was born in London, 22nd June 1817; and died at Albert Lodge, Shanklin, I.W., 2nd January 1907. He was elected a Fellow on 10th January 1851 (the Report of Jurors of the great Exhibition of 1851 mentions his management of the Astronomical Exhibits), and served on the Council 1867–69. H. H. T.

The Rev. George Venables was born at Hamptongay, Oxon, 24th April 1821. He was educated at St Edmund Hall, Oxford, where he took the degree of Student of Civil Law. In 1843 he married Miss Davis of Loudwater, Berks, by whom he had six children. The wife and one daughter survive him. In 1852 he

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* In one case there is some confusion with another "William Simms junr.," afterwards described as W. H. Simms. He was the *son* of William Simms the elder, and brother of the present sole representative of the firm.

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was ordained priest by the Bishop of Oxford, and finally appointed as first Vicar of St Paul's, Chatham, 1855. In 1858 he accepted the private living of Friezland, in the West Riding of Yorkshire, which he left in 1870 to become Vicar of St Matthew's, Leicester. In 1874 he was transferred to the important vicarage of Great Yarmouth, and in 1881 he was made a Canon of Norwich Cathedral. Finally, on the nomination of the Lord Chancellor, he became Rector of Burgh Castle, near Great Yarmouth. While at Great Yarmouth he did much to restore the historic parish church, to which he presented a magnificent oak pulpit. Canon Venables was a prolific writer on Church matters. He was a member of the Royal Commission on Patronage, and was select Preacher at Cambridge in 1883. His death took place 30th December 1906, at the age of eighty-five. He was elected a Fellow of the Society on the 11th of January 1856.

Samuel Pierpont Langley was born at Roxbury, Massachusetts, on 22nd August 1834. After he had graduated at Boston High School in 1851, he took up civil-engineering and architecture as his profession. From childhood he had shown great devotion to scientific pursuits, especially to astronomy. He practised his profession for some thirteen years, but after spending part of the years 1864 and 1865 in travelling in Europe, and visiting foreign observatories and learned institutions, he decided on his return to devote his life to the pursuit of science.

His first scientific appointment was that of Assistant at the Harvard College Observatory in 1865. In the following year he was made Assistant Professor of Mathematics in the Naval Academy at Annapolis, a post he almost immediately relinquished to become Director of the Allegheny Observatory at Pittsburg, where he remained for twenty years.

In 1867–68 he was busy with the equipment of the observatory, and a little latter he arranged and carried out a plan for distributing standard observatory time to the existing railway system of the country. In 1869 he went to Kentucky, in charge of a party of the United States Coast Survey, to observe the total eclipse of the Sun, and in 1870 he joined a Government eclipse expedition and went to Jerez in Spain. The only other eclipse expedition he took part in was one to observe the eclipse of 1878 from the top of Pike's Peak.

His first interest at Allegheny was the Sun, and it was whilst he was there that he made his well-known drawings of sun-spots and other details of the Sun's surface. An eminent authority has said of these drawings that the better the detail of the Sun's surface is seen, the more closely does it resemble Langley's drawings.

It was about 1875 that he began to devote much attention to the measurement of the heat spectra of the Sun and other hot bodies. Experience convinced him of the insufficiency of the thermopile as a measuring instrument, and after four or five

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